

a reasonable expectation of success in increasing the moisture absorbing properties of a fiber by applying sericin, since sericin is known to have moisture absorbing properties generally”, and cited a document allegedly teaching such properties. See paragraph 1 on page 5 of the Office Action. Further, the Examiner has argued that “one of ordinary skill would not expect a fiber to exhibit reduced moisture absorptive properties if coated with a highly moisture absorptive substance. Thus, the teachings of Nakashima and Nomura, taken as a whole in view of the knowledge of the art at the time of the invention, do not teach away from their combination”. See paragraph 2 on page 5 of the Office Action. However, although the Examiner asserts that the teachings of Nakashima and Nomura “do not teach away from their combination”, he has failed to provide any reasons why the Nakashima reference fails to teach away from the disclosure of Nomura, despite the express discouragement of such combination at column 5, lines 36-43 of Nakashima (discussed below).

MPEP 2141.02 asserts that “[a] prior art reference must be considered in its entirety, i.e., as a whole, **including portions that would lead away from the claimed invention**” (emphasis added). Further, MPEP 2145 asserts that “[i]t is **improper to combine references where the references teach away from their combination**” (emphasis added). Finally, MPEP 2145 further sets forth that a reference teaches away when it **criticizes, discredits, or otherwise discourages** the solution claimed.

The objective of the Nakashima invention is to provide a “highly moisture absorptive and desorptive fibrous structure having excellent moisture absorptive and desorptive property”. See column 2, lines 51-54 of Nakashima. Further, as set forth in the Amendment of February 25, 2011, Nakashima discloses that “[w]hen an acid treatment is carried out after the reducing treatment as such, carboxyl group of a salt type in the moisture absorptive and desorptive fiber of an acrylic acid type is changed to carboxylic acid (carboxyl group) and this may **lower the functions of the fiber structure such as moisture absorptive and desorptive properties**, heat generating properties by absorbing moisture and pH buffering ability” (emphasis added). See column 5, lines 36-43. That is, Nakashima suggests that the **moisture absorptive and desorptive properties of a fiber are lowered** by decreasing the amount of the carboxyl groups of a salt type.

Thus, if a protein is applied to the fiber structure of Nakashima as proposed by the Examiner, **ionic bonds are formed between the carboxyl groups and the protein**. As a result, the **amount of the carboxyl groups of a salt type will decrease**. Based on the teachings of Nakashima, a person having ordinary skill in the art would have clearly expected that a decrease in the amount of carboxyl groups of a salt type, due to the addition of a protein, would **lower the moisture absorptive and desorptive properties** of the fiber of Nakashima. Further, it is well known in the art that a fiber having lowered moisture absorptive and desorptive properties is inferior in moisture conditioning properties. Although the Examiner asserts that one would not expect a fiber to exhibit reduced moisture absorptive properties if coated with a highly moisture absorptive substance, the Examiner has failed to take into account the teachings of the primary reference. As stated above, it is improper to combine references where the references teach away from their combination.

Further, MPEP 2143.01, citing the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), sets forth that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless ****>**the result would have been predictable to one of ordinary skill in the art”. In the present case, since the Nakashima reference suggests that the addition of a protein to its fiber structure may lower the moisture absorptive and desorptive properties of the fiber, a person having ordinary skill in the art would clearly have **not predicted** an improvement in the moisture absorptive and desorptive properties of the fibrous structure by such combination. Thus, the result suggested by the Examiner would have been unpredictable to one of ordinary skill in the art, particularly based on the teachings of the Nakashima (which suggests a **lowering** of moisture absorbing properties) and Nomura references. Thus, the combination of references is improper under MPEP 2143.01.

The Examiner, in his response to Applicants’ arguments of February 25, 2011, has failed to address the teaching away of Nakashima, except to assert that “one of ordinary skill would not expect a fiber to exhibit reduced moisture absorptive properties if coated with a highly moisture adsorptive substance”. However, based on the Nakashima reference, a person having ordinary skill in the art would not have added sericin, despite it having some moisture absorptive properties, because such person would recognize that ionic bonds would form between sericin and the carboxyl groups of the fiber, thus resulting in a lowering of carboxyl groups of a salt

type. One would expect such a decrease, based on the teachings of Nakashima, to result in the lowering of moisture absorptive and desorptive properties of the fiber.

Based on the above, it is clear that a person having ordinary skill in the art would have lacked motivation to combine the Nakashima reference with the teachings of the Nomura reference, since the Nakashima reference discourages decreasing the amount of carboxyl groups of a salt type, because doing so would **lower** the moisture absorptive and desorptive properties of the fiber.

Thus, since the Nakashima references teaches away from combining with the Nomura reference, the invention of claims 1, 2, 7 and 8 is nonobvious over Nakashima and Nomura, and this rejection should be withdrawn.

With respect to the rejection of claim 6, the above arguments are equally applicable, i.e. a person having ordinary skill in the art would have expected the incorporation of arginine to the fibrous structure of Nakashima to lower the moisture absorptive and desorptive properties of the fiber of Nakashima.

Therefore, a person having ordinary skill in the art would never have combined the teachings of Nakashima with the teachings of Nomura and Hirose. Thus, the invention of claim 6 is nonobvious over Nakashima, Nomura and Hirose, and this rejection should be withdrawn.

Conclusion

In view of the foregoing remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Masao IENO et al.

/Chao Gao/

By 2011.05.18 16:43:26 -04'00'

Chao Gao

Registration No. 65,313

Attorney for Applicants

AES/CG/nek
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
May 18, 2011